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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,499	06/19/2001	Jeffrey A. Bedell	53470.003034	8688

7590 05/14/2004

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EXAMINER
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ALAUBAIDI, HAYTHIM J

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 05/14/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/883,499

Applicant(s)

BEDELL ET AL.

Examiner

Haythim J. Alaubaidi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This Action is a Final Action in response to the amendment of February 25, 2004.
2. Claims 1-21 are presented for examination, of which Claims 1, 10 and 19 are independent claims.
3. The Examiner acknowledges the newly added claim No. 21.
4. Claim 19, is rejected under 35 U.S.C. 112, second paragraph.
5. Claims 1, 6-10, 15-18 and 20-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine.
6. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Leung.
7. Claims 3-4, 12-13 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Shwartz.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
9. Claims 19-20, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The newly added limitations to claim No. 20, are confusing the Examiner, as they are redundant. The same limitations are mentioned twice in the same claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 6-10, 15-18 and 20-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter).

Regarding Claims 1, 6, 8, 10, 15, 17 and 20, Pouschine discloses,  
a query structure assembly module based on query rules (Col 4, Line 61-67; see also Figure No. 8, Elements 126, 212 and 202; see also Col 16, Lines 23-35)  
the query assembly rules being used by the query structure assembly module to evaluate the desired data set (Col 4, Lines 57-58), i.e.

a Domain Modeling Rule Set Preparation Module, a query engine, and an evaluator which communicates with an SQL generator;

see also Col 16, Lines 35-42, i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128 communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

a syntax assembly module for defining at least one query language statement

(Figure No. 8, Element 218; see also Col 16, Lines 23-26), i.e.

The method 200 starts as a Hyperstructure Query Language (HQL) query 202 which is passed to a parser 122 which converts the HQL text to a query component tree 204 which represents the component parts of the query 202.

a process optimization module for evaluating processing options (Col 15, Lines 51-63; see also Figure No. 8, Element 214 and 128; see also Col 5, Lines 1-5) based upon a database schema (Col 14, Lines 57-60), i.e.

The calculation engine 18 (see FIG. 1) uses this information, in combination with information from the other dimensions, to help determine which table to access to get data for the model 50

(Col 16, Lines 43-46), i.e.

Evaluator 128 can also communicate with a math library 220, if a calculation is required, or a sorting and processing system 222, if the process requires ordering of results or sorting in some manner

whereby at least one query language statement may assembled and run against the data source (Figure No. 8, Elements 228, 234 and 236).

Pouschine reference discloses in a second preferred embodiment all of the claimed subject matter set forth above, except the reference does not explicitly indicate in the first limitation of the current Claim the step of basing the defining of a query structure on a plurality of query assembly rules. However Pouschine discloses in another embodiment (embodiment one) the feature of basing the defining of a query

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structure on a plurality of query assembly rules (Col 4, Lines 36-42), Pouschine also discloses adding these rules to the query (Col 16, Lines 30-33), i.e.

These are provided to Domain Modeling Rule Set Preparation 208 which generates the domain modeling rule set 126, which are then supplied to the calculation engine 18, which takes the applicable rules and adds them to the query tree 204 to produce an execution tree with rules 212 for the query engine

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of embodiment one with embodiment two in Pouschine reference to optimize the query processing and minimize the time associated with data retrieval especially in large databases.

Regarding Claims 7 and 16, Pouschine discloses accessing a syntax description (Col 14, Lines 9-13), i.e.

A SQL Audit facility allows a user to audit HQL queries that are sent from the client to the server and view the series of SQL queries that were generated by the Calculation Engine in the fulfillment of the HQL query.

Regarding Claims 9 and 18, Pouschine discloses wherein the system is a component in an online analytical processing system (Col 11, Lines 49-61; see also Col 32, Lines 63-66).

12. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter), and further in view of Ting Leung (U.S. Patent No. 6,574,623 and Leung hereinafter).

Regarding Claims 2, 5, 11 and 14, Pouschine reference discloses all of the claimed subject matter set forth above (the limitations of Claim 1), except the reference does not explicitly indicate the step of evaluating the size of a selected set of tables, nor does it explicitly indicate the length of the selected path. However Leung discloses evaluating the size of a selected set of tables and the length of the selected path (Col 4, Lines 18-25), i.e.

Generally, the SQL statements received as input specify only the desired data, but not how to retrieve the data. ***This step considers both the available access paths*** (indexes, sequential reads, etc.) and system held statistics on the data to be accessed (the size of the table, the number of distinct values in a particular column, etc.), to choose what it considers to be the most efficient access path for the query

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Pouschine with the teachings of Leung to obtain the query results in the quickest way possible (the shortest path to the data source) and from the smallest table size as to minimize the time spent in scanning the data table for the desired information, which leads to increase the system performance by not holding-up the resources.

13. Claims 3-4, 12-13 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter) and further in view of Steven Schwartz (U.S. Patent No. 5,584,024 and Schwartz hereinafter).

Regarding Claims 3-4 and 12-13, Pouschine reference discloses all of the claimed subject matter set forth above (the limitations of Claim 1), except the reference does not explicitly indicate the step of generating intermediate data sets and the ability to reuse them. However Schwartz discloses generating intermediate data sets (Conceptual layer) (Figure No. 5, Element 2; see also Col 9, Lines 31-42), i.e.

FIG. 5 shows a high level block diagram of an intelligent query system that embodies the principles of the invention. It is composed of two parts, the Query System 1 and Conceptual Layer 2. Conceptual Layer 2 is composed of information derived from database 3, including table and column information, and information entered by an administrator to provide more intuitive access to the user. Query System 1 uses the information from Conceptual Layer 2 as well as general knowledge about SQL and database querying to limit the user in building queries to only those queries which will produce semantically correct results.

and the ability to reuse them (Figure No. 5), i.e.

specific queries are coded and made available to users via question lists. For example, FIG. 3B shows a simple screen containing a list of predefined queries. Users can choose to run queries directly from the list or make minor modifications to the query before running it.



Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Pouschine with the teachings of Shwartz to include intermediate data sets in order to optimize the query process through simplifying the query language.

Regarding claim 19, the limitations of this claim is similar in scope to the rejected claims 1 and 3 above, as Claim 19 is a combination of both Claim 1 and 3. It is therefore rejected as set forth above.

Regarding Claim 21, the limitations of this claim is similar in scope to the rejected claim 1, above. In addition Pouschine teaches the feature of evaluating during the construction of the query (Col 16, Lines 35-42), i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128 communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

### ***Response to Arguments***

14. Applicant's arguments filed February 25, 2004 have been fully considered but they are not persuasive.

Applicant argues that Pouschine does not teach query structure assembly module based on query rules. The Examiner however disagrees. Pouschine teach query structure assembly module based on query rules (Col 4, Line 61-67; see also Figure No. 8, Elements 126, 212 and 202; see also Col 16, Lines 23-35).

Applicant argues that the references used in combination with Pouschine's reference are not combinable (improper motivation). The Examiner however disagrees.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Points of Contact***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haythim J. Alaubaidi whose telephone number is (703) 305-1950. The examiner can normally be reached on Monday - Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any response to this office action should be mailed to:

The Commissioner of Patents and Trademarks, Washington, D.C. 20231 or telefax at our fax number (703) 872-9306.

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, 6<sup>th</sup> Floor Receptionist, Arlington, Virginia. 22202.

***Haythim J. Alaubaidi***

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Patent Examiner  
Technology Center 2100  
May 11, 2004

  
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